

# PREFABRICATED HOMES

(Second Edition)

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## COMMERCIAL STANDARD CS125-47

Effective Date for New Production From November 25, 1947



A RECORDED VOLUNTARY STANDARD  
OF THE TRADE

UNITED STATES DEPARTMENT OF COMMERCE

W. AVERELL HARRIMAN, Secretary

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## COMMERCIAL STANDARD FOR PREFABRICATED HOMES

On September 27, 1944, at the instance of the Prefabricated Home Manufacturers' Institute, a proposed commercial standard for prefabricated homes was circulated to the industry for comment. Following adjustment in the light of the comment received, the recommended commercial standard for this commodity was accepted in writing by the trade and published as Commercial Standard CS125-45.

On May 16, 1947, with the approval of the standing committee, a revision of CS125-45, proposed by the Prefabricated Home Manufacturers' Institute, was circulated for acceptance. Those concerned have since accepted and approved the standard as shown herein.

*Project Manager:* J. W. MEDLEY, Commodity Standards Division, National Bureau of Standards.

*Technical Adviser:* V. B. PHELAN, Building Technology Division, National Bureau of Standards.

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<sup>1</sup> Effective July 1, 1947, the Division of Simplified Practice, organized in 1921, and the Division of Trade Standards, organized in 1927, were combined to form the Commodity Standards Division. Since their organization, both of these Divisions have assisted many industries in the development of Simplified Practice Recommendations and Commercial Standards for a wide variety of commodities. A list of previously established Commercial Standards appears herein. A list of effective Simplified Practice Recommendations may be obtained from the Commodity Standards Division, National Bureau of Standards, Washington 25, D. C.

# COMMERCIAL STANDARD CS125-47

for

## PREFABRICATED HOMES

(SECOND EDITION)

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### PURPOSE

100. The purpose of this standard is to establish a measure of quality for prefabricated homes.

### SCOPE

200. This standard provides minimum requirements for one-, one-and-a-half-, and two-story prefabricated homes. It covers requirements for light and ventilation, space access and privacy, structural strength of the various component parts, thermal insulation and condensation control, and requirements for heating, plumbing, and electric wiring. It includes general requirements for materials and workmanship, site erection and assembly of prefabricated units, and protection during transportation and erection.

### DEFINITION

300. A prefabricated home is one having walls, partitions, floors, ceilings, and/or roof composed of sections or panels varying in size which have been fabricated in a factory prior to erection on the building foundation. This is in contrast to the conventionally built home which is constructed piece by piece on the site.

### GENERAL REQUIREMENTS

400. Prefabricated homes shall conform to the following general requirements.

401. *Light and ventilation.*

.1. Habitable rooms shall be provided with natural light and ventilation by means of glazed openings. Other spaces shall be provided with natural light and ventilation as required for habitable rooms, or with adequate ventilation only by means of screened openings, louvers, or ducts opening to outside air. Ratios between the areas of openings for light and ventilation and areas of rooms and spaces shall be not less than shown in table 1. Required areas for ventilation may be reduced when equipment for all-year forced-air circulation is installed in the building.

TABLE 1. Ratio of glass and openable areas to floor area

| Type of room or space                                     | Glass area (light)      | Openable area (ventilation)   |
|---|-------------------------|---|
| Living room, dining room, bedroom, laundry, utility room. | 1/10.....               | 1/20.   |
| Kitchen.....  | 1/8.....                | 1/16.   |
| Bathroom and water-closet compartment.....                | 1/10 (3 sq ft minimum). | 1/20 (3 sq ft minimum).   |
| Spaces between ceiling and roof.....                      |                         | 1/300 (minimum of two vents spaced for maximum cross ventilation).                              |
| Confined space enclosing furnace or boiler.....           |                         | Fixed vent with free area equal to free area of flues or vents to which equipment is connected. |
| Basement for storage and general utility *.....           | 1/50.....               | 1/50.   |

\* Portions of basements partitioned for habitable rooms shall conform to specific requirements for such rooms.

#### 402. *Space, access, and privacy.*

.1. Each dwelling unit shall contain not less than one bedroom, one bathroom, living room, and facilities for dining and cooking in separate rooms or in combination with the living room.

.2. Minimum room areas shall be as shown in table 2. Area occupied by a stair is not considered part of a habitable room. Where a space heater is in a habitable room, the minimum area shall be increased by 25 sq ft. If solid fuel is used, storage space, in addition to that required for general storage, shall be provided.

402.3. Minimum ceiling heights shall be as set forth below:

- (a) Basement—7 ft.
- (b) Main story—7 ft 6 in.
- (c) Second story—7 ft 6 in. for at least one-half of the required room area.

NOTE.—Areas under sloping ceilings up to 50 percent of total room area with clear height of 5 ft or more may be included in determining room area.

.4. Clothes closets shall have a minimum depth of 1 ft 9 in. and clear hanging space at least 5½ ft high.

.5. Access and privacy:

- (a) The bedroom in one-bedroom dwelling units and at least two bedrooms in all other dwelling units shall have access to a bathroom without passing through another habitable room.
- (b) For dwelling units having three or more bedrooms each bedroom shall have access to a bathroom without passing through another bedroom.
- (c) Each habitable room shall have access to each other habitable room without passing through a bedroom or bathroom.
- (d) A bathroom shall not open directly into a kitchen nor shall the only bathroom serving a living unit be located in the basement.

TABLE 2. Minimum room area and storage space

| Rooms              |              |              |              | Combination             |                 |                         | Bedrooms     |              |              | Bath <sup>a</sup> | Closets             |                     |                     |              | Storage, general |
|--------------------|--------------|--------------|--------------|-------------------------|-----------------|-------------------------|--------------|--------------|--------------|-------------------|---------------------|---------------------|---------------------|--------------|------------------|
| Living             | Dining       | Kitchen      |              | Living, dining, kitchen | Dining, kitchen | Living, dining, kitchen | One          | Two          | Three        |                   | Coat and 1 bed-room | Coat and 2 bed-room | Coat and 3 bed-room | Linen        |                  |
| <i>sq ft</i>       | <i>sq ft</i> | <i>sq ft</i> | <i>sq ft</i> | <i>sq ft</i>            | <i>sq ft</i>    | <i>sq ft</i>            | <i>sq ft</i> | <i>sq ft</i> | <i>sq ft</i> | <i>sq ft</i>      | <i>sq ft</i>        | <i>sq ft</i>        | <i>sq ft</i>        | <i>sq ft</i> | <i>cu ft</i>     |
| ONE-BEDROOM UNIT   |              |              |              |                         |                 |                         |              |              |              |                   |                     |                     |                     |              |                  |
| 250                | 160          |              |              |                         | 90              |                         | 110          |              |              | 70                | 12                  |                     |                     | 2            | 160              |
| 250                |              |              |              |                         |                 |                         | 110          |              |              | (a)               | 12                  |                     |                     | 2            | 160              |
| 250                |              | 60           | 190          |                         |                 | 250                     | 110          |              |              | (a)               | 12                  |                     |                     | 2            | 160              |
| 250                |              |              |              |                         |                 |                         | 110          |              |              | (a)               | 12                  |                     |                     | 2            | 160              |
| 290                | 160          | 60           |              |                         |                 |                         | 110          |              |              | (a)               | 12                  |                     |                     | 2            | 160              |
| TWO-BEDROOM UNIT   |              |              |              |                         |                 |                         |              |              |              |                   |                     |                     |                     |              |                  |
| 250                | 160          |              |              |                         | 90              |                         | 110          | 70           |              | 70                |                     | 18                  |                     | 3            | 200              |
| 250                |              |              |              |                         |                 |                         | 110          | 70           |              | (a)               |                     | 18                  |                     | 3            | 200              |
| 250                |              | 60           | 190          |                         |                 | 250                     | 110          | 70           |              | (a)               |                     | 18                  |                     | 3            | 200              |
| 290                | 160          | 60           |              |                         |                 |                         | 110          | 70           |              | (a)               |                     | 18                  |                     | 3            | 200              |
| THREE-BEDROOM UNIT |              |              |              |                         |                 |                         |              |              |              |                   |                     |                     |                     |              |                  |
| 250                | 160          |              |              |                         | 90              |                         | 110          | 100          | 70           | 70                |                     |                     |                     | 3            | 240              |
| 250                |              |              |              |                         |                 |                         | 110          | 100          | 70           | (a)               |                     |                     |                     | 3            | 240              |
| 250                |              | 60           | 190          |                         |                 | 250                     | 110          | 100          | 70           | (a)               |                     |                     |                     | 3            | 240              |
| 290                | 160          | 60           |              |                         |                 |                         | 110          | 100          | 70           | (a)               |                     |                     |                     | 3            | 240              |

<sup>a</sup> To accommodate bathtub, water closet, and lavatory.

403. *Workmanship.*

.1. Manufacture, assembly, and erection shall be such as will assure results that meet the requirements of this standard. Manufacturing tolerances shall be such as will assure assembly and erection in accordance with the design, without creating unanticipated stresses. All connections between panels, elements, and sections shall be tight and true. Exposed exterior surfaces, joints, and connections shall be weathertight and durable.

404. *Materials.*

.1. Materials shall be suitable and sufficiently durable for the purposes intended. The suitability and durability of materials not in general use shall be determined by appropriate tests.

.2. Working stresses for materials, where not assigned in nationally recognized standards, shall be based upon test performance, using factors of safety comparable to those assigned to established materials.

405. *Protection.*

.1. All sections, panels, materials, and equipment shall be protected against damage at all times prior to the completion of the dwelling.

406. *Erection.*

.1. Erection shall be in accordance with the manufacturer's drawings and instructions covering field assembly procedure. Damage to any part of the dwelling prior to completion shall be repaired or replaced as may be necessary to restore the original appearance and assure performance as required under the standard.

407. *Certification.*

.1. When required, the prefabricator shall furnish certification that:

- (a) All factory-fabricated parts of the house are in conformance with:
  - (1) Requirements of this standard.
  - (2) Drawings, specifications, and supporting data.
- (b) Prefabricated houses, sections, or panels, the components of which are not readily accessible to inspection at the site, are identical with specimens upon which approval was based.
- (c) All mechanical and electrical installations which are not readily accessible to inspection at the site are identical with installations which have been inspected and certified by <sup>1</sup> \_\_\_\_\_ as complying with applicable laws and ordinances of <sup>2</sup> \_\_\_\_\_.

.2. The following certificate illustrates the method used by member companies of the Prefabricated Home Manufacturers' Institute to assure buyers of receiving a home of sound quality and substantial construction.

<sup>1</sup> A testing laboratory, inspection service, or other qualified organization.

<sup>2</sup> Name of community.

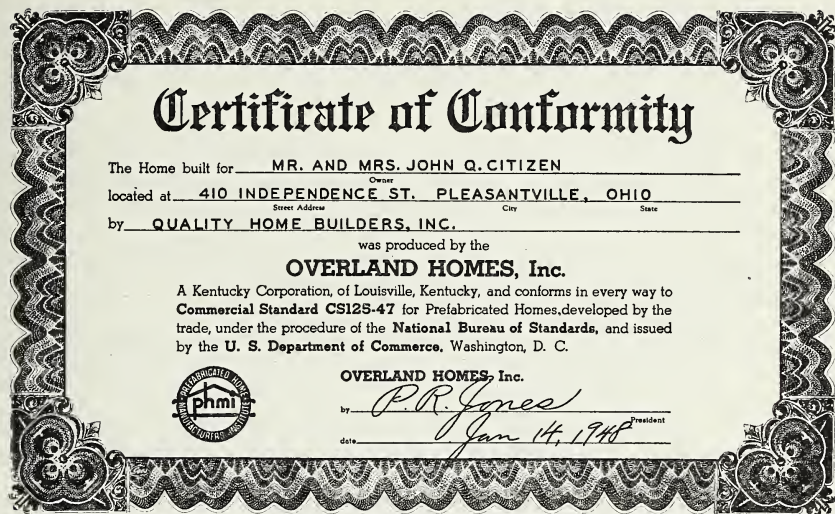


FIGURE 1. Certificate of Prefabricated Home Manufacturers' Institute.

## STRENGTH REQUIREMENTS

500.

501. *Foundations.*

1. Foundations shall conform to the requirements of Building Materials and Structures Report BMS107, dated January 1, 1947, entitled "Building Code Requirements for New Dwelling Construction," issued by the National Bureau of Standards and recommended by the National Housing Agency.

2. Effective protection against termites shall be provided in areas in which termite infestation exists.

502. *Strength.*

1. The strength of each panel, member, joint, fastening, and connection shall be determined by one of the following methods:

(a) Structural analysis, based on nationally recognized engineering procedures.

(b) Comparison with certified test data for generally similar panels, members, or connections for which strengths have been established.

(c) Certified tests made as set forth herein.

503. *Design loads.*

1. Design loads used to determine the stiffness of panels, sections, or members shall be the live loads required herein.

2. Design loads used to determine the transverse bending strength of floors, ceilings, and roof under uniformly distributed load, and the compressive strength of walls and partitions shall be made up of the required live loads plus dead loads.

3. All other design loads are as required herein.

.4. Design loads for girders carrying more than 90 sq ft of floor area, and for columns, bearing walls, and footings supporting such girders, shall be made up of the dead load plus the full uniform live load on the roof, plus 50 percent of the uniform live load on floors and in attics used for light storage.

504. *Test loads.*

.1. Test loads are expressed as a multiple of the design loads.

.2. The weight of a panel or section under test shall be properly evaluated as dead load when dead load is a part of the design load.

.3. The weight of a panel or section under test shall be neglected when dead load is not included in the design load.

505. *Tests.*

.1. Tests shall be made in accordance with the procedures of:

(a) The National Bureau of Standards, Washington, D. C., or

(b) The Forest Products Laboratory, Madison, Wis., or

(c) The American Society for Testing Materials, Philadelphia, Pa., or

(d) Other authorities approved by the building official.

506. *Performance.*

.1. Performance of tested construction shall be as required herein.

.2. Computed construction shall not exceed the stiffness requirements listed herein and shall not exceed established working stresses for materials under design loadings.

507. *Snow and wind loads.*

.1. Snow load (fig. 2) and wind velocity pressure (fig. 3) maps contained herein are taken from "American Standard Building Code Requirements for Minimum Design Loads in Buildings and Other Structures", published by the National Bureau of Standards as Miscellaneous Publication M179 and by the American Standards Association as A58.1-1945.

508. *Floors.*

.1. *Uniformly distributed load.*

.11. Live load.

(a) 20 lb per sq ft for attics used for light storage.

(b) 30 lb per sq ft for habitable upper story of single-family houses.

(c) 40 lb per sq ft for main story.

.12. Performance.

(a) Under the design load the maximum permitted deflection shall be:

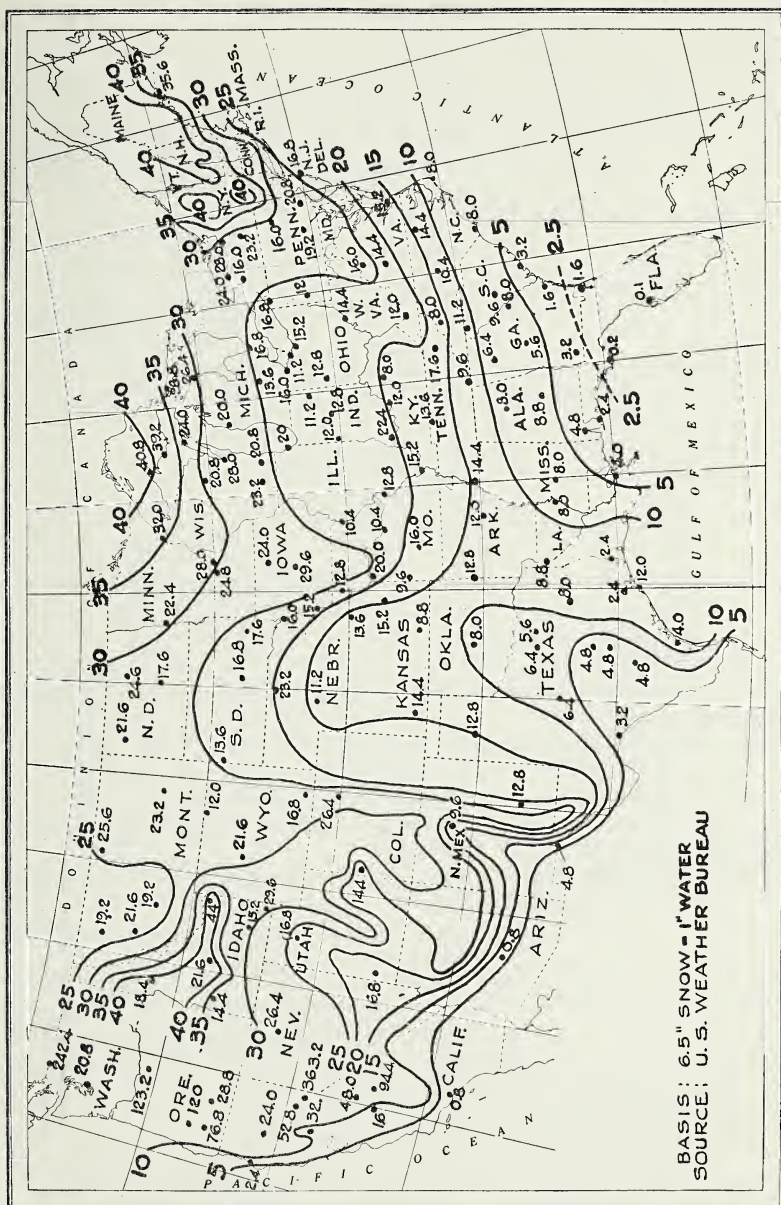
(1)  $1/360$  of the clear span where surface below is plaster, or

(2)  $1/270$  of the clear span for all other cases.

(b) Under 2 times design load applied for 24 hours, or under fast loading totaling  $2\frac{1}{4}$  times design load the following shall be causes for rejection:

(1) Failure of any member considered in the design of the panel; or

(2) Permanent set greater than 25 percent of the maximum deflection.



BASIS: 6.5" SNOW - 1" WATER  
SOURCE: U. S. WEATHER BUREAU

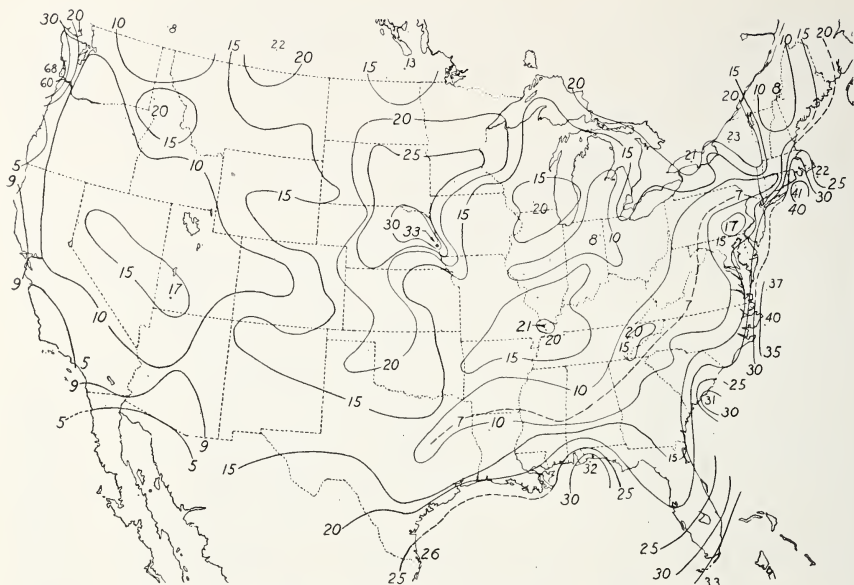


FIGURE 3. Velocity pressures (in pounds per square foot).

2. *Concentrated load.*

21. *Design load.*

Load applied at weakest point of panel on an area having a 1-in. diameter.

(a) 150 lb for floored attics used for light storage.

(b) 250 lb for all other cases.

22. *Performance.*

Performance of panels and sections shall be as required for floors, paragraph 508.12 (a) and (b).

(a) For portions of panels spanning between framing members:

(1) Under design load, the maximum deflection shall be  $1/270$  of the clear span.

(2) Under 2 times design load, applied for 24 hours, or under fast loading totaling  $2\frac{1}{4}$  times design load, there shall be no failure or permanent set greater than 25 percent of the maximum deflection.

3. *Impact load.*

31. *Design load.*

Drop of a 10-in.-diameter sand bag weighing 60 lb.

32. *Performance.*

(a) Under drop of 4 ft, damage to any member considered in the design shall be cause for rejection.

(b) Under drop of 6 ft, failure of any structural member shall be cause for rejection.

509. *Walls.*

1. *Uniformly distributed load.*

## .11. Design load.

Load acting transversely, inward, or outward, consisting of the number of lb per sq ft (in no case less than 15 lb) derived by considering the wind velocity pressures at 30-ft-height above ground as design wind pressures at the assumed average height of a two-story building and by multiplying wind velocity pressure, for locality as shown on wind velocity pressure map (fig. 3), by 0.9 or 1.1 for main or upper story walls, respectively.

## .12. Performance.

As required for floors under uniform load, paragraph 508.12.

.2. *Concentrated load.*

## .21. Design load.

50 lb acting transversely at weakest point of panel on an area having 1-in. diameter.

## .22. Performance:

(a) Under design load the maximum permitted deflections for portions of panel spanning between ribs shall be:

(1)  $1/360$  of clear span for interior surfaces; or

(2)  $1/120$  of clear span for interior surfaces other than plaster, or

(3)  $1/240$  of clear span for exterior surfaces.

.3. *Impact load.*

## .31. Design load.

Drop of 10-in.-diameter sand bag weighing 60 lb.

## .32. Performance:

(a) Under drop of 2 ft, damage to any member considered in the design of the panel shall be cause for rejection.

(b) Under drop of 4 ft, failure of any structural member shall be cause for rejection.

.4. *Compressive and tensile loads.*

## .41. Design load.

Compressive and tensile forces resulting from design loads (including wind, snow, and dead loads) applied on a line one-third of wall thickness from inside face, or according to conditions of actual loading.

## .42. Performance:

(a) Under above loads, any damage to any wall covering, header, or other structural member shall be cause for rejection.

(b) Under 2 times above loads applied for 24 hours or under fast loading of  $2\frac{1}{4}$  times above loads, failure of any structural member considered in the design of the panel shall be cause for rejection.

.5. *Racking load.*.51. Design load.<sup>3</sup>

Racking load resulting from design wind load as set forth herein.

<sup>3</sup> Racking design load may be based on proportional distribution of wind forces from wall and roof surfaces under transverse load to walls, bearing partitions, and other braced partitions loaded parallel to the plane of the panel. To obtain unit design load for wall sections of identical construction, without openings, assume equal distribution of racking load throughout the total length of all portions of the wall between door and window openings.

## .52. Performance.

For a panel or panels nominally 8 ft by 8 ft:

- (a) Under above racking load the maximum permitted displacement shall be  $\frac{1}{8}$  in.
- (b) Under 2 times above load, failure of any structural member considered in design of panel shall be cause for rejection.

510. *Partitions, load-bearing.*.1. *Uniformly distributed load.*

## .11. Design load.

Minimum of 15 lb per sq ft, acting transversely.

## .12. Performance.

As required for floors in paragraph 508.12.

.2. *Concentrated load.*

## .21. Design:

50 lb, acting transversely, applied at weakest point of panel on an area having 1-in. diameter.

## .22. Performance.

- (a) Under above concentrated load the maximum permitted deflections for portions of panel spanning between ribs shall be:

(1)  $1/360$  of clear span for plaster surfaces.

(2)  $1/120$  of clear span for surfaces other than plaster.

- (b) As required in paragraph 508.12 (b).

.3. *Impact load.*

As required in paragraph 509.3.

.4. *Compressive and tensile loads.*

As required in paragraph 509.4.

.5. *Racking load.*

As required in paragraph 509.5.

511. *Ceilings.*

## .11. Design load.

No live load need be assumed for ceiling where no provision is made for attic storage.

## .12. Performance.

Deflection limitations under design load as required in paragraph 508.12(a).

NOTE.—Where access to storage space above is provided or where ceiling is underside of floor, live loads and performance shall be as set forth in paragraph 508.

512. *Roofs.*.1. *Uniformly distributed load.*

## .11. Live load.

Load consisting of wind load and snow load as set forth herein, but not less than:

(1) Vertical load of 20 lb per sq ft of horizontal projection for slopes 40 degrees or less; or

(2) Load of 12 lb per sq ft normal to the roof surface for slopes greater than 40 degrees.

(3) Load of 15 lb per sq ft normal to roof acting outward.

- (a) Design wind loads <sup>4</sup> higher than 15 lb per sq ft normal to roof, shall be obtained from the wind-velocity pressure map (fig. 3) directly as explained under paragraph 509.11. The map values shall be multiplied by 0.9 for a one-story and by 1.1 for a two-story building roof and by the applicable values given in table 3.

TABLE 3. *Multiplying factors to be used with velocity pressure to obtain total wind loads (exterior plus interior) in pounds per square foot normal to roof*

[Values obtained from factors below are for 1-story houses. For 2-story houses, add 20 percent]

| Direction of force | Slope of roof $\phi$                  | Multiplying factor       |
|--------------------|---------------------------------------|--------------------------|
| Inward.....        | 0 degrees to 20 degrees.....          | 0                        |
|                    | 20 degrees to 30 degrees.....         | 0.037 ( $\phi-20$ )      |
|                    | 30 degrees to 60 degrees or more..... | 0.37+.0163 ( $\phi-30$ ) |
| Outward.....       | For all roof slopes.....              | 1.15                     |

- 512.11. (b) Snow load in lb per sq ft of horizontal projection shall be as shown on snow-load map (fig. 2) for roofs of 0- to 30-degree slope. For any angle of slope  $\phi$  from 30 to 60 degrees, snow loads shall be obtained by multiplying snow load from snow-load map by factor  $2-(\phi/30)$ .

- (c) Combination of wind, snow, and dead loads may be reduced 25 percent, for purposes of design, provided:

- (1) Reduced amount is not less than snow load and dead load combined, or wind and dead load combined, and

- (2) Total live loads are not less than value required in paragraph 512.11, (1), (2), and (3).

## .12. Performance.

- (a) Under the design load the maximum permitted deflections shall be:

- (1) 1/360 of the clear span where surface below is plaster.

- (2) 1/240 of the clear span for roofs having other applied finish below.

- (3) 1/180 of the clear span for roofs having unfinished interior surfaces.

- (b) As required in paragraph 508.12 (b).

- (c) All performance requirements for floors, paragraph 508.12, shall apply to flat roofs designed as decks.

## .2 Concentrated load.

## .21. Design load.

200 lb applied vertically at weakest point of panel on an area having 1-in. diameter.

<sup>4</sup> Loads are based upon combined maximum interior and exterior forces as given in BMS107, Building Code Requirements for New Dwelling Construction, par. 702, Appendix.

## .22. Performance.

As required in paragraph 512.12 (a), (b), and (c), and for portions of panels spanning between framing members:

(1) Under design load, maximum deflection shall be  $1/180$  clear span.

(2) Under 2 times design load, there shall be no failure and no permanent set greater than 25-percent maximum deflection.

.3. *Impact load.*

As required in paragraph 509.3.

513. *Anchorage.*

## .1. Design load.

Connections between foundations and other components and elements of the dwelling, such as sills, beams, floors, and walls, shall be designed to resist sliding, uplift, and overturning resulting from wind loads. Calculations to determine anchorage design loads shall be based on the use of the full dead load of the dwelling.

## .2. Performance.

Connections shall sustain 2 times the design load without failure.

## DETAIL REQUIREMENTS

600.

601. *Chimneys, flues, and vents.*

.1. Masonry chimneys shall conform to the requirements of the "Building Code" recommended by the National Board of Fire Underwriters, and may be used for all fuels.

.2. Flues and vents other than as required under paragraph 601.1 shall be as approved and listed by the Underwriters' Laboratories, Inc., and may be used only for the fuel on which approval is based.

602. *Roofing.*

Roofing materials shall be applied in accordance with the manufacturer's directions. The type and method of applying roofing and flashing shall assure weathertightness for at least 10 years.

603. *Insulation.*

.1. The heat loss of a dwelling unit, and of each heated or finished space within, expressed in Btu per hour, shall not exceed 60 times the number of square feet of floor area of such unit or space.

NOTE.—Floor-area measurements (at each principal floor level) shall be to outer faces of exterior walls (or enclosing partitions in attics) and to center lines of interior partitions.

.2. Heat-transmission coefficients for panels or sections shall be in accordance with data and methods described in the latest edition of Heating, Ventilating, and Air Conditioning Guide, published by the American Society of Heating and Ventilating Engineers.

.3. Heat-loss calculations shall be in accordance with data and methods described in the above Guide, and shall be based upon maintaining 70° F inside air temperature at 5 ft above floor, with outside temperature as required in the above Guide or in accordance with commonly accepted practice of local professional engineers.

604. *Condensation control.*

.1. Means shall be provided to minimize condensation on concealed or exposed surfaces of the dwelling and within spaces and materials thereof. Some such means are:

(a) Adequate thermal resistance of the construction.

(b) Vapor barrier on warm side providing greater vapor resistance than the total vapor resistance of all materials and construction on the exterior side of the vapor barrier.

(c) Ventilation. As required in paragraph 401.

605. *Miscellaneous.*

All other items, including but not limited to painting, glazing, sheet metal work, etc., not specifically covered by this standard shall conform to nationally recognized standards or to commonly accepted trade practices.

**HEATING, PLUMBING, AND ELECTRICAL REQUIREMENTS**

## 700.

701. *Heating.*

.1. Each dwelling unit shall be provided with heating facilities which are safe, durable, efficient, properly adjusted and economical to operate.

.2. Capacity of the heating facility shall be determined in conformance with the Heating, Ventilating and Air Conditioning Guide published by the American Society of Heating and Ventilating Engineers.

.3. Under design conditions, facilities shall produce not less than an inside temperature of 70° F at 5 ft above floor and 1 foot from any wall within heated space. Maximum permitted difference in temperature between centers of any two rooms, measured at 5 ft above floor, shall be not more than 10° F for overflow heaters and 5° F for heating systems.

.4. Net output (gross output less allowances for distribution and pickup and any other loads imposed) shall be not less than heat loss of dwelling. Gross output and allowances for distribution and pickup shall be determined by the applicable nationally recognized rating code or commercial standard.

.5. All coal- and oil-fired heating equipment shall conform to applicable commercial standards.

.6. All gas-fired equipment shall conform to requirements of the American Gas Association.

.7. The products of combustion from coal- and oil-fired heating equipment, and from gas-fired central heating equipment and floor furnaces shall be discharged into a chimney, flue, or vent through an acceptable breeching. See paragraph 601, chimneys, flues, and vents.

.8. Space shall be provided within dwelling unit for heating equipment and smoke pipe, with sufficient clearances for maintenance, repair, and safety. Heat generated shall not raise surface temperatures of combustible walls, floor, or ceiling above 160° F. Installation shall conform to the requirements of the National Board of Fire Underwriters.

.9. Warm air distribution systems shall not transfer air from one dwelling unit to another.

702. *Plumbing, piping, and sanitation.*

## .1. Each dwelling unit shall be provided with:

(a) Necessary plumbing fixtures.

(b) Adequate supply of safe, potable, hot and cold water, connected to plumbing fixtures.

(c) Adequate, safe facilities for sewage disposal.

.2. Materials, workmanship, and installation shall conform to all applicable local and State laws and to "Uniform Plumbing Code" <sup>5</sup> issued by the Housing and Home Finance Agency.

703. *Electrical wiring.*

.1. Each dwelling unit shall be provided with electrical service.

.2. Materials, workmanship, and installation shall conform to the recommendations of the current National Electrical Code.

## HISTORY OF PROJECT

800. On November 19, 1943, the Prefabricated Home Manufacturers' Institute requested the cooperation of the National Bureau of Standards in the establishment of a commercial standard for prefabricated homes. A preliminary draft of the proposed commercial standard was submitted on February 25, 1944, to manufacturers and a large number of interested organizations for their views and comment. All comment was carefully considered at a meeting held in Chicago on March 27, 1944. An adjusted draft was then prepared and submitted on September 27, 1944, to technical organizations, lending agencies, testing laboratories, building officials, and to all known interested manufacturers for further review and comment. The standard was then modified in accordance with the composite recommendations of those concerned and circulated to the trade for written acceptance. Following written acceptance by a satisfactory majority, the standard was promulgated as Commercial Standard CS125-45, effective May 10, 1945.

## FIRST REVISION

801. In accordance with the proposal of the Prefabricated Home Manufacturers' Institute, based upon suggestions made by the National Housing Agency and approved by the standing committee, a recommended revision of the standard was circulated on May 16, 1947, to the trade for written acceptance. The success of the revision was announced on October 27, 1947, the revised standard being designated CS125-47.

## STANDING COMMITTEE

802. The following individuals comprise the membership of the standing committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Each organization nominated its own representative. Comment concerning the standard and suggestions for revision may be addressed

<sup>5</sup> Expected to be available about January 1, 1948.

to any member of the committee or to the Commodity Standards Division, National Bureau of Standards, which acts as secretary for the committee.

HARRY H. STEIDLE (chairman), Prefabricated Home Manufacturers' Institute, 908 20th Street NW., Washington 6, D. C.

JOHN A. STEWART, Bennett-Stewart Co., Inc., 105 Newbury Street, Boston 16, Mass.

JOHN PEASE, Pease Woodwork Co., Inc., Blue Rock and Turrill Streets, Cincinnati 23, Ohio.

H. ARTHUR TUCKER, Southern Mill & Manufacturing Co., P. O. Box 1087, Tulsa 1, Okla.

GEORGE A. POAG, George A. Poag & Associates, 925 Lincoln Tower, Fort Wayne 2, Ind.

KARL H. KETTELHUT, 77 LaFayette Loan & Trust Building, LaFayette, Ind.

WILLIAM V. TORMA, National Cooperatives, Inc., Architectural & Building Division, 343 South Dearborn Street, Chicago 4, Ill.

E. J. FRICKE, Indiana Farm Bureau Cooperative Association, Inc., 47 South Pennsylvania Street, Indianapolis 9, Ind. (Representing National Cooperatives, Inc.)

CARROLL A. TOWNE, Office of the Housing Expediter, Temporary E Building, Washington 25, D. C.

HOWARD L. SMITH, Underwriting Division, Federal Housing Administration, Washington 25, D. C.

RAYMOND F. TALBERT, Pittsburgh Home Savings & Loan Assn., 438 Wood Street, Pittsburgh 22, Pa. (Representing National Savings & Loan League.)

FRANKLIN HARDINGE, JR., U. S. Savings & Loan League, 221 North LaSalle Street, Chicago 1, Ill.

STANLEY B. BAKER, 719 Van Buren Street, Topeka, Kans. (Representing Building Officials Conference of America.)

CHESTER CROSSFIELD, 302 City Hall, Nashville 3, Tenn. (Representing Southern Building Code Congress.)

REED B. COYLE, Arrott Building, Pittsburgh 22, Pa. (Representing Mortgage Bankers Association of America.)

MILTON T. MACDONALD, Trust Company of New Jersey, 35 Journal Square, Jersey City, N. J. (Representing American Bankers Association.)

### EFFECTIVE DATE

803. Having been passed through the regular procedure of the Commodity Standards Division, and approved by the acceptors herein-after listed, this commercial standard was issued by the Department of Commerce, effective from November 25, 1947.

Edwin W. Ely,  
*Chief, Commodity Standards Division.*



## ACCEPTANCE OF COMMERCIAL STANDARD

If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this commercial standard.

Date \_\_\_\_\_

Commodity Standards Division,  
National Bureau of Standards,  
Washington 25, D. C.

Gentlemen:

We believe that the Commercial Standard CS125-47 constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the

production <sup>1</sup>                      distribution <sup>1</sup>                      purchase <sup>1</sup>                      testing <sup>1</sup>  
of prefabricated homes.

We reserve the right to depart from it as we deem advisable.

We understand, of course, that only those articles which actually comply with the standard in all respects can be identified or labeled as conforming thereto.

Signature of authorized officer \_\_\_\_\_  
(In ink)

(Kindly typewrite or print the following lines)

Name and title of above officer \_\_\_\_\_

Organization \_\_\_\_\_  
(Fill in exactly as it should be listed)

Street address \_\_\_\_\_

City, zone, and State \_\_\_\_\_

<sup>1</sup> Underscore which one. Please see that separate acceptances are filed for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interests, trade associations, trade papers, etc., desiring to record their general support, the words "General support" should be added after the signature.

## TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement.*—Commercial standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices, and the like.

2. *The acceptor's responsibility.*—The purpose of commercial standards is to establish for specific commodities, nationally recognized grades or consumer criteria and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the commercial standard where practicable, in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility.*—The major function performed by the Department of Commerce in the voluntary establishment of commercial standards on a Nation-wide basis is fourfold: first, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. *Announcement and promulgation.*—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.

## ACCEPTORS

804. The organizations listed below have individually accepted this standard as far as practicable in the production, distribution, testing, or purchase of pre-fabricated homes. In accepting the standard, they reserved the right to depart therefrom as they individually deem advisable. It is expected that articles which actually comply with the requirements of this standard in all respects will be regularly identified or labeled as conforming thereto, and that purchasers will require such specific evidence of conformity.

## ASSOCIATIONS

(General Support)

Building Officials Conference of America, Inc., Washington, D. C.  
Dairymen's League Co-Operative Association, Inc., New York, N. Y.  
Insulation Board Institute, Chicago, Ill.  
Mortgage Bankers Association of America, Pittsburgh, Pa.  
National Cooperatives, Inc., Building & Architectural Standards Division, Chicago, Ill.  
National Savings & Loan League, Pittsburgh, Pa.  
Ninth Federal Savings & Loan Association of New York City, New York, N. Y.  
Northeastern Wood Utilization Council, Brooklyn, N. Y., and New Haven, Conn.  
Prefabricated Home Manufacturers' Institute, Washington, D. C., and Tulsa, Okla.

## FIRMS

Abingdon Potteries, Inc., Abingdon, Ill.  
Adams Rite Manufacturing Co., Glendale, Calif.  
Adirondack Log Cabin Co., Inc., New York, N. Y.  
Admiral Homes, Inc., West Newton, Pa.  
Advance Aluminum & Brass Co., Los Angeles, Calif.  
Akron Hardware Manufacturing Corp., Long Island City, N. Y.  
Aladdin Co., The, Bay City, Mich.  
Alton Mineral Wool Insulation Co., St. Louis, Mo.  
Anchorage Homes, Inc., Westfield, Mass.  
Anderson-Rawlings Co., The, Crete, Nebr.  
Armstrong Cork Co., Lancaster, Pa.  
Associated Plywood Mills, Inc., Eugene, Oreg.  
Baldwin-Hill Co., Trenton, N. J. (General support)  
Bennett-Stewart Co., Inc., Boston, Mass.  
Bickel-Poe Corp., The, Massillon, Ohio.  
Bigelow, Frederic, Newark, N. J.  
Bilco Co., The, New Haven, Conn. (General support.)  
Biltwell Steel Products Corp., Brooklyn, N. Y.  
Binghamton, City of, Binghamton, N. Y.  
Birmingham, City of, Birmingham, Ala.  
Bohannon, David D., Organization, San Mateo, Calif.  
Bradshaw, H. W., Watseka, Ill.  
Brailei Homes, Inc., North Little Rock, Ark.  
Brown, Geo. C., & Co., Greensboro, N. C.  
Bruce, E. L., Co., Memphis, Tenn.  
Brust & Brust, Milwaukee, Wis.  
Builders' General Supply Co., Cranford, N. J.  
Burek Construction Co., Hollywood, Calif.  
Butler Manufacturing Co., Kansas City, Mo.  
Calbar Paint & Varnish Co., Philadelphia, Pa.  
Cameron Lumber Co., Inc., Newburgh, N. Y.  
Campbell, J. W., Inc., Palatka, Fla.  
Canova, Alfred, Inc., Union City, N. J.  
Capital Prefabricators, Inc., Austin, Tex.  
Carey, Philip, Manufacturing Co., The, Cincinnati, Ohio.  
Casein Co. of America, New York, N. Y.  
Charlotte Lumber & Manufacturing Co., Charlotte, N. C.

## FIRMS—Continued

Citro Oil Burners Corp., Pompton Lakes, N. J. (General support.)  
City Lumber Co. of Bridgeport, Inc., The, Bridgeport, Conn.  
Clark-Stek-O Corp., Rochester, N. Y.  
Cleveland, City of, Department of Public Safety, Division of Building and Housing, Cleveland, Ohio. (General support.)  
Cleverdon, Varney & Pike, Boston, Mass.  
Coffin, R. V., Seattle, Wash.  
Commonwealth Plywood Co., Ltd., Ste. Therese (Terrebonne), Quebec, Canada.  
Condensation Engineering Corp., Chicago, Ill.  
Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.  
Construction Service Co., Middlesex, N. J.  
Crawford Co., Inc., Baton Rouge, La.  
Curtis & Davis, New Orleans, La.  
Cuyahoga Falls, City of, Cuyahoga Falls, Ohio.  
Designers for Industry, Inc., Cleveland, Ohio.  
Detroit Testing Laboratory, The, Detroit, Mich.  
Eagle Home Insulation Co., Lincoln, Nebr.  
Eagle-Picher Sales Co., The, Insulation Division, Cincinnati, Ohio. (General support.)  
Eckhart Manufacturing Co., Roselle, N. J. (General support.)  
Edco Products, Inc., Hopkins, Minn.  
Eddy Shipbuilding Corp., Housing Division, Bay City, Mich.  
Electrical Testing Laboratories, Inc., New York, N. Y.  
Elkin, Bernard P., New York, N. Y.  
Erie Flooring & Wood Products, Ltd., West Lorne, Ontario, Canada.  
Eureka Williams Corp., Bloomington, Ill.  
Field Detroit Co., Birmingham, Mich.  
Florida, University of, School of Forestry, Gainesville, Fla.  
Ford, Ivon R., Inc., McDonough, N. Y.  
GBH-Way Homes, Inc., Walnut, Ill.  
Gadsden, City of, Gadsden, Ala.  
Gem Trailer Co., Inc., Twin Falls, Idaho.  
General Industries, Inc., Fort Wayne, Ind.  
General Panel Corp. of California, Burbank, Calif.  
General Wood Works, Council Bluffs, Iowa.  
Georgia Housing Co., Inc., Macon, Ga.  
Goodall Electric Manufacturing Co., Ogallala, Nebr.  
Green Lumber Co., The, Laurel, Miss.  
Green's Ready-Built Homes, Inc., Rockford, Ill.  
Greenwood Engineering Co., Inc., Baltimore, Md.  
Gunnison Homes, Inc., U. S. Steel Corp. Subsidiary, New Albany, Ind.  
H & S Lumber Co., Charlotte, N. C.  
Hagerman Construction Corp., Fort Wayne, Ind.  
Hagerstown, The Mayor and Council of, Hagerstown, Md. (General support.)  
Halliday Co., Ltd., The, Burlington, Ontario, Canada.  
Hammel Radiator Engineering Co., Los Angeles, Calif.  
Harbor Sales Co., Inc., The, Baltimore, Md.  
Harman, William H., Corp., Wilmington, Del.  
Harnischfeger Corp., Houses Division, Fort Washington, Wis.  
Hartung, F. L., Co., Seattle, Wash.

## FIRMS—Continued

Hawaiian Cane Products, Ltd., Culver City, Calif.  
 Hawkins Lumber & Warehouse Co., Boston, Mass.  
 Hess, Charles, Co., New York, N. Y.  
 Hilpert Developments, Bethlehem, Pa.  
 Hilz Homes Co., Toronto, Ohio.  
 Hodgson, E. F., Co., Division of Allied-Hodgson Housing Corp., Boston, Mass.  
 Hoffmann, George W., Corp., New York, N. Y.  
 Holden, McLaughlin & Associates, New York, N. Y.  
 Home Builders Corp., Atlanta, Ga.  
 Home Building Corp., Sedalia, Mo.  
 Home Corp. of America., De Kalb, Ill.  
 Homeola Corp., The, Chicago, Ill.  
 Hopmayer Stove Co., Passaic, N. J.  
 Houston Ready-Cut House Co., Houston, Tex.  
 Ilg Electric Ventilating Co., Chicago, Ill.  
 Illinois Lumber Manufacturing Co., Cairo, Ill.  
 Illinois Steel Bridge Co., Jacksonville, Ill.  
 Jackson Electrical Co., Chicago, Ill.  
 Johnson, S. T., Co., Oakland, Calif.  
 Johnson Quality Home, Inc., Brooklyn, N. Y.  
 Joseph Lumber Co., Chicago, Ill.  
 K & M Corp., Norfolk, Va.  
 Kenosha, City of, Kenosha, Wis. (General support)  
 Kettelhut, K. H., Lafayette, Ind.  
 Kimberly-Clark Corp., Neenah, Wis. (General support)  
 Klomprens Lock-Joint Manufacturing Co., Washington, D. C.  
 Kneeland Bigelow Dist. Co., Bay City, Mich.  
 Kohler Co., Kohler, Wis. (General support)  
 Kolb, M. B., Co., Inc., New York, N. Y.  
 Ladue, City of, St. Louis County, Mo.  
 Lennox Furnace Co., Marshalltown, Iowa.  
 Lincoln Lumber Co., Oakland, Calif.  
 Lindsay, Claude T., Inc., San Francisco, Calif.  
 Little, H. C., Burner Co., Inc., San Rafael, Calif.  
 Long Beach, Better Business Bureau of, Long Beach, Calif.  
 Macomber, Inc., Canton, Ohio.  
 Mahoney Sash & Door Co., The, Canton, Ohio.  
 Malleable Iron Fittings Co., Branford, Conn. (General support)  
 Marsh & Truman Lumber Co., Chicago, Ill.  
 Martin, W. Marshall, Huntington, W. Va.  
 Maryland Modern Housing Corp., Baltimore, Md.  
 McKewen Bros. Co., Chicago, Ill.  
 Mercoid Corp., The, Chicago, Ill. (General support)  
 Metz Homes, Inc., Bethpage, N. Y.  
 Midwest Fabricating Co., Mansfield, Ohio.  
 Midwest Housing Corp., Janesville, Wis.  
 Minnesota Linseed Oil Paint Co., Minneapolis, Minn.  
 Minnesota & Ontario Paper Co., Insulate Division, Minneapolis, Minn. (General support)  
 Minot Builders Supply Co., Minot, N. Dak.  
 Modular Structures, Inc., Tacoma, Wash.  
 Monarch Metal Weatherstrip Corp., St. Louis, Mo.  
 Monsanto Chemical Co., Western Division, Lockport, N. Y. (General support.)  
 Morley Brothers, Saginaw, Mich.  
 Moser, C. S., Industries, Lumber Division, Savannah, Tenn.  
 National Airoil Burner Co., Philadelphia, Pa.  
 National Homes Corp., Lafayette, Ind.  
 National Rock Wool Sales, Inc., Lagro, Ind.  
 Neal-Blun Co., Savannah, Ga.  
 New Hampshire, University of, Engineering Experiment Station, Durham, N. H.  
 New York Iron Roofing & Corrugating Co., Inc., The, Jersey City, N. J.  
 Nichols & Cox Lumber Co., Grand Rapids, Mich.  
 Nuway Corp., The, Rock Island, Ill.  
 Paducah Sash & Door Co., Inc., Paducah, Ky.  
 Page & Hill Co., Minneapolis, Minn.  
 Palace Corp., Flint, Mich.

## FIRMS—Continued

Payson Manufacturing Co., The, Chicago, Ill.  
 Pearson, Frederick Z., Consulting Engineers, Aurora, Ill.  
 Pease Woodwork Co., Inc., Cincinnati, Ohio.  
 Peerless Housing Co., Inc., New York, N. Y.  
 Pierce, John B., Foundation, Raritan, N. J.  
 Pittsburgh Plate Glass Co., Pittsburgh, Pa. (General support.)  
 Ply-Wel Industries, Oakland, Calif.  
 Poag, George A., & Associates, Fort Wayne, Ind.  
 Portland, City of, Bureau of Buildings, Portland, Oreg.  
 Precision Homes Co., Stockton, Calif.  
 Preco Corp., Kirkland, Wash.  
 Pre-Fab Industries (Operating Division General Building Materials, Inc.), Bremen, Ind.  
 Prefabricated Products Co., Seattle, Wash.  
 Prefabrication Engineering Co., Portland, Oreg.  
 Production Line Structures, Los Angeles, Calif.  
 Puritan Lighting Fixture Co., Brooklyn, N. Y.  
 Quality Homes, Inc., Joliet, Ill.  
 Rastetter, Louis, & Sons Co., Fort Wayne, Ind. (General support.)  
 Riedel, L. H., Lumber Co., Inc., Marlette, Mich.  
 Rolker, E. Chas., Albany, N. Y.  
 Ruberoid Co., The, New York, N. Y.  
 S & S Roofing Co., York Haven, Pa.  
 St. Paul & Tacoma Lumber Co., Tacoma, Wash.  
 Salem Lime & Stone Co., Salem, Ind.  
 Scott Lumber Co., The, Wheeling, W. Va.  
 Sears, Roebuck & Co., Chicago, Ill.  
 Shappert Engineering Co., Belvidere, Ill.  
 Skill-Craft Homes, Inc., Akron, Ohio.  
 Southern Mill & Manufacturing Co., Tulsa, Okla.  
 Special Materials Corp., Oakland, Calif.  
 Springfield, City of, Springfield, Mo.  
 Stackhouse, S. J., & Son, Baltimore, Md.  
 Standard Fabrication, Inc., Chicago, Ill.  
 Stanway Prefabricated Buildings Co., Montclair, N. J.  
 Strand Building Products Co., Detroit, Mich.  
 Structures, Inc., Chicago, Ill.  
 Sunvar Corp., Wilmington, Del.  
 Tacoma Lumber Fabricating Co., Tacoma, Wash.  
 Tec-Bilt Homes of Miami, Inc., Miami Springs, Fla.  
 Technical Glass Co., Inc., Los Angeles, Calif.  
 Tex-Rock Insulation Co., Temple, Tex. (General support.)  
 Texas Housing Co., Dallas, Tex.  
 Throop-Martin Co., The, Columbus, Ohio.  
 Timber Structures, Inc., Portland, Oreg.  
 Timmerman, Karl G., Fayetteville, N. Y.  
 Tovell Construction Co., Greenville, Ga.  
 U. S. Homes, Inc., Marietta, Ga.  
 United States Prefab Corp., Patchogue, Long Island, N. Y.  
 United States Testing Co., Inc., Hoboken, N. J.  
 Waukegan Construction Material Co., Waukegan, Ill.  
 West Side Manufacturing Co., Milwaukee, Wis.  
 Wheeler, Osgood Co., The, Tacoma, Wash.  
 Williams & Hunting Co., Cedar Rapids, Iowa.  
 Williams Oil-O-Matic Division, Eureka Williams Corp., Bloomington, Ill.  
 Williamson, Inc., Sheboygan Falls, Wis.  
 Winner Manufacturing Co., Inc., Trenton, N. J.  
 Winston-Salem, City of, Winston-Salem, N. C.  
 Winston System Homes, Redlands, Calif.  
 Wisconsin Oil Burner Co., Madison, Wis.  
 Wood Lumber Co., Birmingham, Ala.  
 Wood Products Magazine, Chicago, Ill. (General support.)

## UNITED STATES GOVERNMENT

Interior, U. S. Department of the, Office of Indian Affairs, Washington, D. C.

## COMMERCIAL STANDARDS

| CS No. | Item  | CS No.  | Item  |
|--------|---|---------|---|
| 0-40.  | Commercial standards and their value to business (third edition).   | 57-40.  | Book cloths, buckrams, and impregnated fabrics for bookbinding purposes except library bindings (second edition).                                   |
| 1-42.  | Clinical thermometers (third edition).  | 58-36.  | Woven elastic fabrics for use in overalls (over-all elastic webbing).   |
| 2-30.  | Mopsticks.  | 59-44.  | Textiles—testing and reporting (fourth edition).  |
| 3-40.  | Stoddard solvent (third edition).   | 60-36.  | Hardwood dimension lumber.  |
| 4-29.  | Staple porcelain (all-clay) plumbing fixtures.  | 61-37.  | Wood-slat venetian blinds.  |
| 5-46.  | Pipe nipples; brass, copper, steel and wrought-iron (second edition).   | 62-38.  | Colors for kitchen accessories.   |
| 6-31.  | Wrought-iron pipe nipples (second edition). Superseded by CS5-46.   | 63-38.  | Colors for bathroom accessories.  |
| 7-29.  | Standard weight malleable iron or steel screwed unions.   | 64-37.  | Walnut veneers.   |
| 8-41.  | Gage blanks (third edition).  | 65-43.  | Methods of analysis and of reporting fiber composition of textile products (second edition).  |
| 9-33.  | Builders' template hardware (second edition).   | 66-38.  | Marking of articles made wholly or in part of platinum.   |
| 10-29. | Brass pipe nipples. Superseded by CS5-46.   | 67-38.  | Marking articles made of karat gold.  |
| 11-41. | Moisture regains of cotton yarns (second edition).  | 68-38.  | Liquid hypochlorite disinfectant, deodorant, and germicide.   |
| 12-40. | Fuel oils (fifth edition).  | 69-38.  | Pine oil disinfectant.  |
| 13-44. | Dress patterns (fourth edition).  | 70-41.  | Phenolic disinfectant (emulsifying type) (second edition) (published with CS71-41).   |
| 14-43. | Boys' button-on waists, shirts, junior and sport shirts (made from woven fabrics) (third edition).                          | 71-41.  | Phenolic disinfectant (soluble type) (second edition) (published with CS70-41).   |
| 15-46. | Men's pajama sizes (made from woven fabrics) (third edition).   | 72-38.  | Household insecticide (liquid spray type).  |
| 16-29. | Wall paper.   | 73-45.  | Old-growth Douglas-fir standard-stock doors (third edition).  |
| 17-47. | Diamond core drill fittings (fourth edition).   | 74-39.  | Solid hardwood wall paneling.   |
| 18-29. | Hickory golf shafts.  | 75-42.  | Automatic mechanical-draft oil burners designed for domestic installations (second edition).  |
| 19-32. | Foundry patterns of wood (second edition).  | 76-39.  | Hardwood interior trim and molding.   |
| 20-47. | Staple vitreous china plumbing fixtures (fourth edition).   | 77-40.  | Sanitary cast-iron enameled ware.   |
| 21-39. | Interchangeable ground-glass joints, stop-cocks, and stoppers (fourth edition).   | 78-40.  | Ground-and-polished lenses for sun glasses (second edition) (published with CS79-40).   |
| 22-40. | Builders' hardware (nontemplate) (second edition).  | 79-40.  | Blown, drawn, and dropped lenses for sun glasses (second edition) (published with CS78-40).   |
| 23-30. | Feldspar.   | 80-41.  | Electric direction-signal systems other than semaphore type for commercial and other vehicles subject to special motor-vehicle laws (after market). |
| 24-43. | Screw threads and tap-drill sizes.  | 81-41.  | Adverse-weather lamps for vehicles (after market).  |
| 25-30. | Special screw threads. Superseded by CS24-43.   | 82-41.  | Inner-controlled spotlamps for vehicles (after market).   |
| 26-30. | Aromatic red cedar closet lining.   | 83-41.  | Clearance, marker, and identification lamps for vehicles (after market).  |
| 27-36. | Mirrors (second edition).   | 84-41.  | Electric tail lamps for vehicles (after market).  |
| 28-46. | Cotton fabric tents, tarpaulins and covers (second edition).  | 85-41.  | Electric license-plate lamps for vehicles (after market).   |
| 29-31. | Staple seats for water-closet bowls.  | 86-41.  | Electric stop lamps for vehicles (after market).  |
| 30-31. | Colors for sanitary ware.   | 87-41.  | Red electric warning lanterns.  |
| 31-38. | Wood shingles (fourth edition).   | 88-41.  | Liquid burning flares.  |
| 32-31. | Cotton cloth for rubber and pyroxylin coating.  | 89-40.  | Hardwood stair treads and risers.   |
| 33-43. | Knit underwear (exclusive of rayon) (second edition).   | 90-.    | (Reserved for power shovels and cranes.)  |
| 34-31. | Bag, case, and strap leather.   | 91-41.  | Factory-fitted Douglas-fir entrance doors.  |
| 35-47. | Hardwood plywood (third edition).   | 92-41.  | Cedar, cypress and redwood tank stock lumber.   |
| 36-33. | Fourdrinier wire cloth (second edition).  | 93-41.  | Portable electric drills (exclusive of high frequency).   |
| 37-31. | Steel bone plates and screws.   | 94-41.  | Calking lead.   |
| 38-32. | Hospital rubber sheeting.   | 95-41.  | Lead pipe.  |
| 39-37. | Wool and part wool blankets (second edition) (withdrawn as commercial standard, July 14, 1941).                             | 96-41.  | Lead traps and bends.   |
| 40-32. | Surgeons' rubber gloves.  | 97-42.  | Electric supplementary driving and passing lamps for vehicles (after market).   |
| 41-32. | Surgeons' latex gloves.   | 98-42.  | Artists' oil paints.  |
| 42-43. | Structural fiber insulating board (third edition)   | 99-42.  | Gas floor furnaces—gravity circulating type.  |
| 43-32. | Grading of sulphonated oils.  | 100-44. | Porcelain-enameled steel utensils (second edition).   |
| 44-32. | Apple wraps.  | 101-43. | Flue-connected oil-burning space heaters equipped with vaporizing pot-type burners.   |
| 45-47. | Douglas fir plywood (seventh edition).  | 102-.   | (Reserved for Diesel and fuel-oil engines).   |
| 46-40. | Hosiery lengths and sizes (third edition).  | 103-42. | Cotton and rayon velour (jacquard and plain).   |
| 47-34. | Marking of gold-filled and rolled-gold-plate articles other than watchcases.  | 104-46. | Warm-air furnaces equipped with vaporizing pot-type oil burners (second edition).   |
| 48-40. | Domestic burners for Pennsylvania anthracite (underfeed type) (second edition).   | 105-43. | Mineral wool; loose granulated, or felted form, in low-temperature installations.   |
| 49-34. | Chip board, laminated chip board, and miscellaneous boards for bookbinding purposes.  |         |   |
| 50-34. | Binders board for bookbinding and other purposes.   |         |   |
| 51-35. | Marking articles made of silver in combination with gold.   |         |   |
| 52-35. | Mohair pile fabrics (100-percent mohair plain velvet, 100-percent mohair plain frieze, and 50-percent mohair plain frieze). |         |   |
| 53-35. | Colors and finishes for cast stone.   |         |   |
| 54-35. | Mattresses for hospitals.   |         |   |
| 55-35. | Mattresses for institutions.  |         |   |
| 56-41. | Oak flooring (second edition).  |         |   |

| CS No.                  | Item  | CS No.  | Item   |
|-------------------------|---|---------|--|
| 106-44.                 | Boys' pajama sizes (woven fabrics) (second edition).  | 127-45. | Self-contained mechanically refrigerated drinking water coolers.                             |
| 107-45.                 | Commercial electric-refrigeration condensing units (second edition).                                    | 128-45. | Men's sport shirt sizes—woven fabrics (other than those marked with regular neckband sizes). |
| 108-43.                 | Treading automobile and truck tires.  | 129-47. | Materials for safety wearing apparel (second edition).                                       |
| 109-44.                 | Solid-fuel-burning forced-air furnaces.   | 130-46. | Color materials for art education in schools.  |
| 110-43.                 | Tire repairs—vulcanized (passenger, truck, and bus tires).  | 131-46. | Industrial mineral wool products, all types—testing and reporting.                           |
| 111-43.                 | Earthenware (vitreous-glazed) plumbing fixtures.  | 132-46. | Hardware cloth.  |
| 112-43.                 | Homogeneous fiber wallboard.  | 133-46. | Woven wire netting.  |
| 113-44.                 | Oil-burning floor furnaces equipped with vaporizing pot-type burners.                                   | 134-46. | Cast aluminum cooking utensils (metal composition).  |
| 114-43.                 | Hospital sheeting for mattress protection.  | 135-46. | Men's shirt sizes (exclusive of work shirts).  |
| 115-44.                 | Porcelain-enameled tanks for domestic use.  | 136-46. | Blankets for hospitals (wool, and wool and cotton).  |
| 116-44.                 | Bituminized-fibre drain and sewer pipe.   | 137-46. | Size measurements for men's and boys' shorts (woven fabrics).                                |
| 117-44.                 | Mineral wool; blankets, blocks, insulating cement, and pipe insulation for heated industrial equipment. | 138-47. | Insect wire screening.   |
| 118-44.                 | Marking of jewelry and novelties of silver.   | 139-47. | Work gloves.   |
| (E)119-45. <sup>1</sup> | Dial indicators (for linear measurements).  | 140-47. | Testing and rating convectors.   |
| 120-46.                 | Standard stock ponderosa pine doors (second edition).   | 141-47. | Sine bars, blocks, plates, and fixtures.   |
| 121-45.                 | Women's slip sizes (woven fabrics).   | 142-47. | Automotive lifts.  |
| 122-45.                 | Western hemlock plywood.  | 143-47. | Standard strength and extra strength perforated clay pipe.                                   |
| 123-45.                 | Grading of diamond powder.  | 144-47. | Formed metal porcelain enameled sanitary ware.   |
| (E)124-45. <sup>1</sup> | Master disks.   | 145-47. | Testing and rating hand-fired hot-water-supply boilers.                                      |
| 125-47.                 | Prefabricated homes (second edition).   | 146-47. | Gowns for hospital patients.   |
| 126-45.                 | Tank-mounted air compressors.   |         |  |

<sup>1</sup> Where "(E)" precedes the CS number, it indicates an emergency commercial standard, drafted under war conditions with a view toward early revision.

NOTICE.—Those interested in commercial standards with a view toward accepting them as a basis of everyday practice may secure copies of the above standards, while the supply lasts, by addressing the Commodity Standards Division, National Bureau of Standards, Washington 25, D. C.